

### **IN THE CLAIMS**

Please amend the claims as follows:

1. (Currently Amended) A method for reducing scan time by a mobile communication unit comprising:

maintaining a single mapping within the mobile communication unit for one or more active channels associated with a single network identifier; and  
tuning to one of the active channels using the single mapping to allow the mobile communication unit to either associate or reassociate with a wireless network having the associated network identifier.

2. (Currently Amended) A method comprising:  
maintaining a single mapping for one or more active channels associated with a single network identifier; The method of claim 1 further comprising-

associating with a wireless network using the mapping for one of the active channels associated with a selected network identifier,

wherein the method is performed by a communication unit to reduce scan time in a wireless local area network, and wherein the maintaining the mapping is performed by one of driver circuitry, firmware and network-interface circuitry,

wherein the associating is performed by network-interface circuitry tuning to the one of the active channels in response to the mapping, the mapping comprising one of either a bitmap, an array, a linked list, or a hash table, and

wherein the network-interface circuitry to determine the mapping based on the network identifier provided by an operating system.

3. (Currently Amended) The method of claim 1 further comprising scanning ~~for active channels~~ to determine network identifiers associated with the one or more active channels, and wherein the maintaining comprises:

generating one or more single bitmaps for the one or more active channels associated with single network identifiers; and

storing the bitmaps in a bitmap table, and

wherein to either associate or reassociate, the method comprises:

scanning the one or more active channels identified in the bitmap table; and

refraining from scanning for channels not identified in the bitmap table to reduce scan time.

4. (Original) The method of claim 1 further comprising:

scanning predetermined channels to identify network identifiers associated with active of the predetermined channels; and

generating a bitmap for the active channels and their associated network identifiers, wherein the predetermined channels are predetermined for a geographic location.

5. (Original) The method of claim 2 wherein the associating comprises sending an association request on a channel associated with a selected network identifier through an access point, wherein a network associated with the selected network identifier authenticates the communication unit in response to the association request.

6. (Original) The method of claim 5 wherein the associating further comprises:

sending the selected network identifier to the network-interface circuitry;

retrieving the bitmap associated with the selected network identifier by the driver circuitry;

tuning, in response to the bitmap, to a channel for sending the association request; and

sending the association request to the access point over a wireless link using an antenna.

7. (Original) The method of claim 1 further comprising passively scanning channels, and waiting for receipt of a beacon frame, the beacon frame including the network identifier associated with one of the scanned channels.

8. (Currently Amended) The method of claim 1 further comprising passively scanning channels further comprises ~~by~~ receiving a probe response directed to another communication unit on one of the channels, the probe response including the network identifier associated with an active channel.

9. (Original) The method of claim 7 wherein the scanning further comprising active scanning and includes for predetermined channels,  
transmitting a probe request on at least one of the predetermined channels; and  
waiting to receive a probe response from an access point, the probe response including the network identifier associated with an active channel.

10. (Currently Amended) A method comprising:  
maintaining a single mapping for one or more active channels associated with a single network identifier;  
passively scanning channels by waiting for receipt of a beacon frame, the beacon frame including the network identifier associated with one of the passively scanned channels,  
actively scanning predetermined channels by transmitting a probe request on at least one of the predetermined channels and waiting to receive a probe response from an access point, the probe response including the network identifier associated with an active channel.  
~~The method of claim 9~~ wherein the predetermined channels are independent basic service set channels for a geographic location.

11. (Original) The method of claim 10 further comprising repeating the transmitting the probe request sequentially for other channels of the independent basic service set to determine network identifiers for active channels of the independent basic service set.

12. (Currently Amended) A mobile communication unit that scans channels of wireless networks with a reduced scan time comprising:  
network-interface circuitry to maintain a single mapping for one or more active channels associated with a single network identifier; and

transceiver circuitry to tune to one of the active channels using the mapping to allow the communication unit to either associate or reassociate with a wireless network having the associated network identifier,

wherein the mapping comprises one of either a bitmap, an array, a linked list, or a hash table, and

wherein to either associate or reassociate, the transceiver circuitry scans the one or more active channels identified in the bitmap table, and refrains from scanning channels not identified in the bitmap table to reduce scan time.

13. (Currently Amended) A communication unit comprising:  
network-interface circuitry to maintain a single mapping for one or more active channels associated with a single network identifier; and  
transceiver circuitry to tune to one of the active channels using the mapping to allow the communication unit to either associate or reassociate with a wireless network having the associated network identifier,

wherein the mapping comprises one of a bitmap, an array, a linked list, or a hash table,  
~~The communication unit of claim 12~~ wherein the network-interface circuitry includes driver circuitry to maintain a bitmap table for the active channels, and

wherein the driver circuitry to generate bitmaps for the active channels and to store the bitmaps in the bitmap table, the bitmap table to associate the bitmaps and network identifiers for the active channels.

14. (Currently Amended) A communication unit comprising:  
network-interface circuitry to maintain a single mapping for one or more active channels associated with a single network identifier;  
transceiver circuitry to tune to one of the active channels using the mapping to allow the communication unit to either associate or reassociate with a wireless network having the associated network identifier; and  
an operating system,

wherein the mapping comprises one of either a bitmap, an array, a linked list, or a hash table, and

~~The communication unit of claim 12 further comprising an operating system, wherein the operating system in conjunction with the network-interface circuitry to scan predetermined channels to identify network identifiers associated with active of the predetermined channels, and the driver circuitry to generate single bitmaps for one or more active channels and their associated network identifiers.~~

15. (Original) The communication unit of claim 14 wherein as part of associating, the transceiver circuitry to send an association request on a channel associated with a selected network identifier through an access point, wherein a network associated with the selected network identifier to authenticate the communication unit in response to the association request.

16. (Original) The communication unit of claim 15 wherein the operating system to send a selected network identifier to the network-interface circuitry, and the network-interface circuitry to retrieve the bitmap associated with the network identifier and to provide the bitmap to the transceiver circuitry, and the transceiver circuitry to tune to a channel for sending the association request and to send the association request to the access point over a wireless link using an antenna.

17. (Original) The communication unit of claim 14 wherein the operating system in conjunction with the network-interface circuitry to passively scan channels by waiting for receipt of a beacon frame, the beacon frame including the network identifier associated with a channel, and

wherein the communication unit is to receive a probe response directed to another communication device while waiting for the beacon frame.

18. (Original) The communication unit of claim 17 wherein the operating system in conjunction with the network-interface circuitry to perform an active scan of predetermined channels, the active scan to include a transmission of a probe request on at least one of the

predetermined channels, and to wait to receive a probe-response frame from an access point, the probe response to include the network identifier associated with an active channel, the probe-response frame to be directed either to the communication unit or another communication unit.

19. (Currently Amended) A mobile system that scans channels of wireless networks with a reduced scan time comprising:

an omnidirectional antenna to communicate with an access point;  
network-interface circuitry to maintain a mapping for active channels and associated network identifiers; and  
transceiver circuitry coupled to the antenna to tune to one of the active channels using the mapping for the active channel to allow either an association or a reassociation with a wireless network having a selected network identifier,  
wherein the mapping comprises one of ~~either~~ a bitmap, an array, a linked list, or a hash table.

20. (Currently Amended) A system comprising:  
an omnidirectional antenna to communicate with an access point;  
network-interface circuitry to maintain a mapping for active channels and associated  
network identifiers; and  
transceiver circuitry coupled to the antenna to tune to one of the active channels using the  
mapping for the active channel to allow either an association or a reassociation with a wireless  
network having a selected network identifier,  
wherein the mapping comprises one of a bitmap, an array, a linked list, or a hash table.

~~The system of claim 19~~ wherein the network-interface circuitry includes driver circuitry to maintain a bitmap table for the active channels, wherein the driver circuitry to generate the bitmaps for the active channels and to store the bitmaps in the bitmap table, the table associating the bitmaps and network identifiers for the active channels, and

wherein to either associate or reassociate with the wireless network, the transceiver circuitry scans the one or more active channels identified in the bitmap table, and refrains from scanning channels not identified in the bitmap table to reduce scan time.

21. (Original) The system of claim 20 further comprising an operating system, wherein the operating system in conjunction with the network-interface circuitry scans predetermined channels to identify network identifiers associated with active of the predetermined channels, and

wherein the driver circuitry to generate a bitmap for the active channels and an associated network identifier.

22. (Original) A method comprising:  
identifying valid channels for a geographic region in which a communication unit is located;

transmitting a probe request on a predetermined subset of the identified valid channels;  
and

waiting for receipt of either a beacon frame or a probe-response frame on channels of the identified valid channels other than the channels of the predetermined subset, the probe-response frame being directed to another communication unit.

23. (Original) The method of claim 22 wherein the transmitting the probe request is performed for channels of the predetermined subset identified a channel mapping stored in the communication unit, the mapping comprising one of either a bitmap, an array, a linked list, or a hash table.

24. (Original) The method of claim 23 wherein for channels of the predetermined subset, the method comprises waiting, in response to transmission of the probe request, for a probe-response frame directed to the communication unit, the probe-response frame including a network identifier.

25. (Original) The method of claim 24 further comprising:  
generating bitmaps valid channels for which a probe-response frame or beacon-frame is received; and

re-associating with a network using at least one of the bitmaps.

26. (Original) The method of claim 22 wherein at least one of the transmitting and the waiting is performed sequentially for each of the identified valid channels.

27. (Currently Amended) A machine-readable medium that provides instructions, which when executed by one or more processors, cause said set of processors to perform operations comprising reducing scan time in a wireless-networking environment and include maintaining a single bitmap in a bitmap table for one or more active channels associated with a single network identifier and another bitmap based on predetermined channels,

wherein to either associate or reassociate, the operations further comprise instructing a transceiver to scan the one or more active channels identified in the bitmap table, and to refrain from scanning for channels not identified in the bitmap table to reduce scan time.

28. (Original) The machine-readable medium of claim 27 wherein the instructions, when further executed by the one or more processors, perform operations further comprising associating with a wireless network using the bitmap for one of the active channels associated with a selected network identifier.

29. (Currently Amended) The machine-readable medium of claim 28 wherein the instructions, when further executed by the one or more processors, perform operations further comprising:

scanning for active channels to determine network identifiers associated with the active channels;

generating the bitmaps for the active channels; and

storing the bitmaps in [[a]] the bitmap table, the table associating the bitmaps and network identifiers for the active channels.

30. (Original) The machine-readable medium of claim 29 wherein the instructions, when further executed by the one or more processors perform operations further comprising sending an



association request on a channel associated with a selected network identifier through an access point, wherein a network associated with the selected network identifier authenticates a communication unit in response to the association request.